

REMARKS

The present application was filed on July 7, 2003 with claims 1 through 23. Claims 1 through 23 are presently pending in the above-identified patent application. Claims 1, 21, and 22 are proposed to be amended and claim 24 is proposed to be added herein.

5 In the Office Action, the Examiner rejected claims 1-4, 21 and 22 under 35 U.S.C. §103(a) as being unpatentable over Devi (United States Patent Publication No. 2003/0147400; hereinafter Devi), in view of Aukia et al. (United States Patent Number 6,594,268; hereinafter Aukia). The Examiner rejected claims 5, 7-9, 13 and 16 under 35 U.S.C. §103(a) as being unpatentable over Devi and in view of Szviatovszki et al. (United States Patent Number
10 6,956,821; hereinafter Szviatovszki), and rejected claim 23 under 35 U.S.C. §103(a) as being unpatentable over Szviatovszki and in view of Shabtay et al. (United States Patent Number 6,895,441; hereinafter Shabtay). The Examiner indicated that claims 10-12, 14, 15, and 17-20 would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

Independent Claims 1, 21 and 22

15 Independent claims 1, 21, and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Devi, in view of Aukia et al. Regarding claim 1, the Examiner asserts that Devi discloses determining, in response to a request, whether any path of a plurality of predetermined paths meets at least one requirement corresponding to the request, wherein the
20 plurality of predetermined paths are determined by substantially maximizing a carried demand on a network using at least traffic demand estimates, network topology information, and current load measurement, and by performing routing for the substantially maximized carried demand (FIGS. 1 and 2; paragraphs [0004]-[0005], [0014], [0026], and [0028]-[0029]). In the Response to Arguments section of the present Office Action, the Examiner asserts that measuring current
25 load at a source (or at a router between source and destination) is well-known and required for routing estimation which is inherent on Devi's method, Aukia clearly discloses the combination of the traffic demand estimation, network topology information, and current load measurement (col. 21, lines 23-51; and col. 10, lines 24-33).

30 Applicants note that independent claims 1, 21, and 22 have been amended to require determining, in response to a request, whether any path of a plurality of predetermined

paths between a source node and a destination node meets at least one requirement corresponding to the request, wherein the plurality of predetermined paths are determined by substantially maximizing a carried demand on a network using at least traffic demand estimates and network topology information, and by performing routing for the substantially maximized carried demand; and *selecting one of said predetermined paths based on a current load measurement, wherein said current load measurement is measured at a source node*, if a given path meeting the at least one requirement is found. Support for this limitation can be found on page 3, line 24, to page 4, line 20; page 5, line 28, to page 6, line 10; and page 17, line 22, to page 18, line 14, of the originally filed disclosure.

Applicants note that Devi does *not* disclose or suggest *selecting one of said predetermined paths between a source node and a destination node based on a current load measurement, wherein said current load measurement is measured at a source node*. Applicants also note that, as the Examiner acknowledges, Aukia discloses a technique similar to OSPF and teaches that each node in the network determines, in a distributed manner, the path for the source-destination pair that traverses the node. (See, Abstract and Summary of the Invention.) Neither Devi nor Aukia disclose or suggest *selecting a predetermined path (between a source node and a destination node) based on a current load measurement measured at a source node*.

Thus, even as combined in the manner suggested by the Examiner, Devi and Aukia *do not teach every element of the independent claims*. Furthermore, based on the KSR considerations discussed hereinafter, the combination/modification suggested by the Examiner is not appropriate.

KSR Considerations

An Examiner must establish “an apparent reason to combine ... known elements.” *KSR International Co. v. Teleflex Inc. (KSR)*, 550 U.S. ___, 82 USPQ2d 1385 (2007). Here, the Examiner merely states that it would have been obvious to incorporate the well-known technique of measuring a current load at a router (or source node) which is responsible to forward and/or send packets to the destination as taught by Aukia to the optimization method based on demand estimate and network topology information as disclosed by Devi for purpose of maximizing revenue based on current and past history of data traffic of a router.

Applicants are claiming a new technique for traffic engineering in a network-based communication system wherein a *predetermined path (between a source node and a destination node) is selected from a plurality of predetermined paths based on a current load measurement measured at a source node*. There is *no* suggestion in *Devi* or in *Aukia*, alone or in
5 combination, to *select a predetermined path (between a source node and a destination node) from a plurality of predetermined paths based on a current load measurement measured at a source node*.

Aukia's teaching to have each node along a path compute its own route *teaches away* from the present invention. The *KSR* Court discussed in some detail *United States v. Adams*, 383 U.S. 39 (1966), stating in part that in that case, "[t]he Court relied upon the corollary
10 principle that when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious." (*KSR* Opinion at p. 12). Thus, there is no reason to make the asserted combination/modification.

Thus, *Devi* and *Aukia*, alone or in combination, do not disclose or suggest
15 determining, in response to a request, whether any path of a plurality of predetermined paths between a source node and a destination node meets at least one requirement corresponding to the request, wherein the plurality of predetermined paths are determined by substantially maximizing a carried demand on a network using at least traffic demand estimates and network topology information, and by performing routing for the substantially maximized carried
20 demand; and selecting one of said predetermined paths based on a current load measurement, wherein said current load measurement is measured at a source node, if a given path meeting the at least one requirement is found, as required by independent claims 1, 21, and 22, as amended.

Independent Claim 23

Independent claim 23 was rejected under 35 U.S.C. §103(a) as being unpatentable
25 over *Szviatovszki* and in view of *Shabtay*. Regarding claim 23, the Examiner asserts that *Szviatovszki* discloses, if a length of the second shortest path is equivalent to a length of the first shortest path, attempting to create a connection on the second shortest path (col. 12, lines 37-43). The Examiner acknowledges *Szviatovszki* does not disclose, but asserts that *Shabtay* discloses that, if a length of the second shortest path is not equivalent to a length of the first shortest path,
30 performing the following steps (col. 5, lines 18-19; col. 4, lines 14-21; col. 5, lines 12-22; and

col. 4, lines 35-42 and 61-67); pruning edges not having a second available bandwidth from the first pruned network, thereby creating a second pruned network (col. 5, lines 19-22); computing a third shortest path between the source node and destination node using the second pruned network (col. 5, lines 19-22); and attempting to create a connection on the third shortest path (col. 5, lines 19-22). In the Response to Arguments section of the previous Office Action, the Examiner asserts that “the length information is provided by OSPF protocol, or that it is combined by bandwidth availability information of the links to utilize rerouting mechanism.”

In the text cited by the Examiner, Szviatovszki teaches that, “if two paths have different, highest-affected priority levels, the path with the lower priority level is chosen. But if the affected priority levels are the same, *the ‘smaller’ path is selected with the lowest pre-empted bandwidth on the highest affected priority level.*” (Col. 12, lines 37-43; emphasis added.) Contary to the Examiner’s assertion, Szviatovszki does *not* disclose or suggest length information. Also, contrary to the Examiner’s assertion, Applicants could find *no* disclosure or suggestion of *length information* in Shabtay. Applicants also find no disclosure or suggestion that the length information is provided by the OSPF protocol, or that it is combined by bandwidth availability information of the links to utilize a rerouting mechanism.

Thus, Szviatovszki and Shabtay, alone or in combination, do not disclose or suggest a length of a second shortest path, as required by independent claim 23.

New Claim 24

New claim 24 has been added to more particularly point out and distinctly claim various features of the invention, consistent with the scope of the originally filed specification, in order to give applicant the protection to which he is entitled. No new matter is introduced. New claim 24 requires the step of dynamically determining a path between a source node and a destination node if none of said plurality of predetermined paths meet the at least one requirement, wherein said dynamic path is determined at the source node. Support for this limitation can be found on page 3, line 24, to page 4, line 20; page 5, line 28, to page 6, line 10; page 6, lines 25-31; page 7, lines 1-4; and page 17, line 22, to page 18, line 14, of the originally filed disclosure.

Applicants note that Devi computes paths off-line and that Aukia discloses a technique similar to OSPF and teaches that each node in the network determines, in a distributed

manner, the path for the source-destination pair that traverses the node. Neither Devi nor Aukia disclose or suggest dynamically determining a path between a source node and a destination node if none of said plurality of predetermined paths meet the at least one requirement, wherein said dynamic path is determined at the source node.

5 Thus, Devi, Aukia, Shabtay, and Szviatovszki, alone or in combination, do not disclose or suggest the step of dynamically determining a path between a source node and a destination node if none of said plurality of predetermined paths meet the at least one requirement, wherein said dynamic path is determined at the source node, as required by new claim 24.

10 Dependent Claims 2-22

 Claims 2-22 are dependent on independent claim 1 and are therefore patentably distinguished over Devi, Aukia, Shabtay, and Szviatovszki, alone or in combination, because of their dependency from amended independent claim 1 for the reasons set forth above, as well as other elements these claims add in combination to their base claim. The Examiner has already
15 indicated that claims 10-12, 14, 15, and 17-20 would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

Conclusion

 All of the pending claims following entry of the amendments, i.e., claims 1-23, are in condition for allowance and such favorable action is earnestly solicited.

20 If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

 The Examiner's attention to this matter is appreciated.

25 Respectfully submitted,



Date: December 16, 2008

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